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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,065	12/11/2001	Kazuhiro Nukiyama	0941.66047	7260

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EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/015,065

Applicant(s)

NUKIYAMA ET AL.

Examiner

Leonid Shapiro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-11 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 2,18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1,3-5,9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murata et al (6,144,355)** in view of **Tanaka et al (4,713,691)** and **Nakano (6,683,585)**.

As to claims 1,9, **Murata et al** discloses a liquid crystal display comprising: a plurality of data driving part (fig.4 (24)) taking in image display data in response to a clock signal supplied (col.7, lines 9-21, see, Fig.4 (Data(R), Data (G), Data (B)), Clock (CK, ST)) and causing an image display part to display an image according to the image display data (col.7, lines 13-24); and a control part (figs.1 (10)) adjusting a phase relationship between the clock signal and image display data (col.3, lines 42-48, 64- col.4, lines 5, lines 13-20), a timing correction part (fig.1(14)) provided in each of said plurality of data driving parts, and making the clock signal and image display data supplied by said control part have Predetermined phase relationship there between (col.3, lines 64- col.4, lines 7, col.5, lines 27-37),

Murata et al did not explicitly disclose that the control part detecting a change pattern of the image display data, and adjusting a phase relationship between the clock signal and image display data.

However, **Tanaka et al** suggests a control part detecting a change pattern of the image display data, and adjusting a phase relationship between the clock signal and image display data according to the detected change pattern (see, Abstract, col.1, lines 48-68, col.3, lines 1-5,20-33).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have incorporated the change detecting method of **Tanaka et al** in to the LCD system of **Murata et al**, because this will provide a stable sampling can be attained even for a high frequency video signal by setting the optimum delay quantity according to the detected delay quantity.

Murata et al. and Tanaka do not disclose the adjustment of the phase relationship is carried out for the purpose of eliminating phase difference of a signal disposed at a different position in the data driving part.

Nakano teaches the adjustment of the phase relationship is carried out for the purpose of eliminating phase difference of a signal disposed at a different position (fig. 2A, items 13-14, from col. 8, line 63 to col. 9, line 5).

Notice, that image position is directly correlated to the different position in the driving part.

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have incorporated teaching of Nakano into **Tanaka et**

al. and Murata et al. system in order to control display picture quality (col. 1, lines 8-15 in the Nakano reference).

As to claim 3, **Tanaka et al** discloses that the control part delays only the image display data having a logical levels changing for each clock period of the clock signal (col.1, lines 49-68, col.3, lines 7-33).

In regard to claim 4, **Tanaka et al** also disclose that the control part delays the clock signal (see, Abstract, fig.1 (7,8,9), col.2, lines 45-52).

AS to claim 5, **Tanaka et al** furthermore teaches control part detects the frequency of the clock signal, and adjusts the phase relationship between the clock signal and image data signal according to the detected frequency as well as the detected change pattern (Abstract, col.1, lines 60-68,col.3, lines 24-33, col.4, lines 4-7).

As to claim 10, **Murata et al** teaches that said control part (fig.1 (10)) detects signal transmission time periods required toward the data driving parts, generates a correction signal according to the detected data transmission time periods to be sent to said timing correcting part; and said timing correcting part

makes the clock signal and image display data have the predetermined phase relationship there between according to the supplied correction signal (col.3, lines 42-47, col.3, lines 64- col.4, lines 7).

As to claim 11, **Murata et al** also teaches that control part supplies a monitoring data signal common for the timing correcting parts; and each of the timing correcting parts detects a phase difference between the thus-supplied monitoring data signal and the clock signal, and, thereby, make the clock signal and image display data have the predetermined phase relationship there between (col.3, lines 42-47, col.3, lines 64- col.4, lines 7).

Allowable Subject Matter

2. Claims 2, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims:

Relative to claim 2 the major difference between the teaching of the prior art of record (Nakano, **Tanaka et al.** and **Murata et al.**) and the instant invention is that said control part uses the image display data for three clock periods of the clock signal for detecting the change pattern of the image display data.

Relative to claim 2 the major difference between the teaching of the prior art of record (Nakano, **Tanaka et al.** and **Murata et al.**) and the instant invention is that plurality of data driving parts are located at different positions, and further wherein

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different data signal delay times are previously set to eliminate timing errors resulting from delays produced when the clock signal is transmitted to data driving parts located at different positions.

Response to Arguments

3. Applicant's arguments with respect to claims 1,3-5,9-11,18 have been considered but are moot in view of the new ground(s) of rejection.

Telephone Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
03.02.07



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